

CLAIMS

- [1] A sound detecting mechanism comprising a pair of electrodes forming a capacitor on a substrate in which one of the electrodes is a back electrode forming perforations therein corresponding to acoustic holes and the other of the electrodes is a diaphragm, characterized in that the diaphragm is mounted on the substrate while the back electrode is mounted in a position opposed to the diaphragm across a void to be supported by the substrate, the back electrode being formed by polycrystal silicon of 5µm to 20µm in thickness.
- [2] A sound detecting mechanism as claimed in Claim 1 characterized in that the substrate comprises a support substrate having a monocrystal silicon substrate acting as the base thereof, and that a silicon substrate of (100) orientation is used as the monocrystal silicon substrate.
- [3] A sound detecting mechanism as claimed in Claim 1 characterized in that impurity diffusion treatment is executed on the diaphragm.
- [4] A sound detecting mechanism as claimed in Claim 1 characterized in that the substrate comprises a support substrate having a monocrystal silicon substrate acting as the base thereof, and that the support substrate consists of an SOI wafer.
- [5] A sound detecting mechanism as claimed in Claim 4 characterized in that the SOI wafer has an active layer used as the diaphragm.
- [6] A sound detecting mechanism as claimed in Claim 4

characterized in that the diaphragm is formed of monocrystal silicon of 0.5 μ m to 5 μ m in thickness.

- [7] A sound detecting mechanism as claimed in Claim 1
5 characterized in that the substrate consists of an SOI structure wafer including a silicon oxide film or a silicon nitride film formed on a monocrystal silicon substrate and a polycrystal silicon film formed on the silicon oxide film or the silicon nitride film.
- 10 [8] A sound detecting mechanism as claimed in Claim 7 characterized in that the polycrystal silicon film formed on the SOI structure wafer is used as the diaphragm.
- 15 [9] A sound detecting mechanism as claimed in Claim 7 characterized in that the diaphragm is formed of polycrystal silicon of 0.5 μ m to 5 μ m in thickness.